

REMARKS

In the Final Office Action dated December 20, 2010, claims 5, 9, and 13 were rejected under 35 U.S.C. § 103(a) as obvious over Yajima (U.S. Pat. Publication No. 2002/0131875) in view of Isogai (U.S. Pat. No. 6,736,900), Kawata (U.S. Pat. No. 4,932,353), and Butler (U.S. Pat. Publication No. 2005/0139344);

claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as obvious over Yajima in view of Isogai, Kawata, and Butler, and further in view of Kawano (U.S. Pat. No. 6,258,167); and

claim 8 was rejected under 35 U.S.C. § 103(a) as obvious over Yajima in view of Isogai, Kawata, Butler, and Kawano, and further in view of Fedulov, A. I., Journal of Mining Science, 1979, Vol. 15, pages 54-65.

Claims 5-9 and 13 are pending.

Rejections under 35 USC § 103(a)

Claims 5, 9, and 13 were rejected under 35 U.S.C. § 103(a) as obvious over Yajima (U.S. Pat. Publication No. 2002/0131875) in view of Isogai (U.S. Pat. No. 6,736,900), Kawata (U.S. Pat. No. 4,932,353), and Butler (U.S. Pat. Publication No. 2005/0139344).

Claim 5 depends from claim 9, which specifically recites a chemical liquid supply apparatus comprising a pump whose one end communicates with a primary-side chemical liquid flow path communicating with the chemical liquid tank and whose other end communicates with a secondary-side chemical liquid flow path communicating with a nozzle body, further comprising a nozzle assembly in which the pump and a nozzle body are provided. Claim 13 similarly recites a chemical liquid supply apparatus, a pump, and nozzle assembly in which the pump and a nozzle body are provided.

In support of the instant rejections, the Examiner admitted that Yajima fails to teach or suggest an apparatus in which the nozzle body is incorporated into the same assembly that houses the pump and valves, but asserted that Isogai

teaches modifying Yajima to include a single assembly incorporating a pump and nozzle body. Applicant respectfully traverses the rejections as follows.

Where a proposed modification would render a reference unsuitable for an intended purpose, there is no motivation to modify the reference. See MPEP 2143.01, citing *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984). Contrary to the Examiner's proposed modification of Yajima in view of Isogai, Yajima specifically teaches that a solution delivery path 17 connects a pump to a nozzle body, and is connected to a chemical liquid supply system 1 "through attaching/detaching mechanisms in the housing unit 1a" so that the solution delivery path "can be easily exchanged" and so that "the chemical liquid supply system can be easily maintained". See Yajima par. 52 and Fig. 1.

One of ordinary skill would expect that modifying Yajima to incorporate a pump and a nozzle body into a single assembly also would entail incorporating into the single assembly a solution delivery path connecting the pump to the nozzle body. Thus, one of ordinary skill would expect the Examiner's proposed modification to eliminate the advantage specifically taught by Yajima, that a solution delivery path attached between a discrete pump and nozzle body "can be easily exchanged" for maintaining a chemical liquid supply system. For at least this reason, one of ordinary skill would not be motivated to modify Yajima according to Isogai.

Additionally, Isogai teaches integrating a screw pump 94 and a delivery nozzle 90 into a single dispenser unit 30, only in context of a highly viscous liquid (hot melt glue). See Isogai col. 6 lines 56-61. By contrast, Yajima is directed to an invention for dispensing a photoresist solution. Thus, Isogai is not analogous art to Yajima. For at least this additional reason, one of ordinary skill would not be motivated to modify Yajima according to Isogai.

Moreover, and contrary to the proposed modification of Yajima in view of Isogai, claims 9 and 13 each further recite a double tube containing the primary-side chemical liquid flow path and surrounded by an external tube containing a

temperature control water that flows in a same flow direction as that of the chemical liquid. The Examiner admitted that neither Yajima, nor Isogai, teaches such an external tube. Instead, providing such an external tube around Yajima's solution delivery path 17 (see Yajima Fig. 2), predictably would detract from ease of exchanging that path. Thus, if anything, Yajima teaches away from providing such a tube. Moreover, Isogai teaches heating a highly viscous liquid only within a dispenser unit 30. See Isogai col. 16 lines 21-65, and Fig. 3. Thus, one of ordinary skill would not perceive, in Isogai, any reason for modifying Yajima to include an external tube as recited by claims 9 and 13.

Nonetheless, the Examiner further asserted that Kawata teaches modifying Yajima and/or Isogai to provide a double tube as recited by claims 9 and 13. Applicant respectfully disagrees. At most, Kawata discloses that a chemical supply pipe 9 has first and second end portions, wherein chemical supplying means (not shown) is connected to the first end portion, and a nozzle is connected to the second end portion. See Kawata claim 1 and Fig. 2. Kawata further teaches that constant-temperature water 7 flows in an auxiliary heat exchanger 11, very close to a nozzle 8 at the end of the chemical supply pipe 9. See Kawata col. 3 lines 38-47. Advantageously, Kawata's arrangement reduces influence of a peripheral temperature on resist liquid at the tip of the nozzle 8. See Kawata col. 1 lines 36-37.

Therefore, as specifically shown by Kawata's Figure 2, both a conduit 10a in which constant-temperature water 7 flows (col. 3, lines 16-17), and a pipe 9 in which the chemical flows (i.e., double tube structure) are disposed only on a secondary side of Kawata's chemical supplying means (not shown). See, also, Kawata col. 3 lines 10-31. Thus, Kawata fails to teach or suggest that any combination of Yajima with Isogai should be further modified to provide a double tube containing a primary-side chemical liquid flow path connected with one end of a pump, as recited by independent claims 9 and 13. For at least this reason, even the proposed combination of Kawata with Yajima and Isogai, still fails to render claim 9, nor claim 13, obvious.

Additionally, Kawata expressly teaches that the temperature of a resist liquid 5 is adjusted by a constant-temperature water 7, which flows in an opposite direction stream to the resist liquid within a heat exchanger 12. See Kawata col. 4 lines 12-28. This teaching directly contradicts claims 9 and 13, which recite a temperature control water that flows in a same flow direction as that of the chemical liquid. For at least this additional reason, even the proposed combination of Kawata with Yajima and Isogai, still fails to render claim 9, nor claim 13, obvious.

Moreover, even if Kawata did teach providing a double tube on a primary side of a pump, as asserted by the Examiner, Applicant respectfully submits that such a teaching would be in conflict with Yajima's teaching to provide a solution delivery path 17 that can easily be detached from a pump, and exchanged. Thus, one of ordinary skill would not be motivated to combine Kawata with Yajima in the manner proposed by the Examiner.

The Examiner further proposes modifying a combination of Yajima, Isogai, and Kawata, according to Butler's teaching of a screw-in T-adapter 6 for use with a domestic hot water heater (see Butler pars. 11-12 and Fig. 4), so as to provide a first coupling block, as yet further recited by claims 9 and 13. For the following reasons, Applicant respectfully disagrees both with the Examiner's presumption of a motivation to combine the disparate references, and with the Examiner's assertion that such combination would produce a coupling block as recited by the pending claims.

First, Butler's T-adapter is for use with a domestic hot water heater. It is a double-walled device that provides a heating or cooling fluid 13 within entry and return tubes 14, 17 that are housed within an outer tube 16. See Butler par. 12 and Fig. 4. Between the entry and return tubes 14, 17 and the outer tube 16, an outwardly-vented air space is provided so that leakage of heating or cooling fluid through the inner tubes, or leakage of potable water through the outer tube, will not result in mutual contamination of the heating / cooling fluid and the potable water. See Butler par. 12. Thus, Butler specifically requires a double tube that

contains a vented air space surrounding a temperature control flow path. By contrast, the pending claims recite a double tube that contains a primary-side chemical liquid flow path, surrounded by a temperature control flow path. Therefore, Butler does not teach or suggest a T-adapter or coupling block that is compatible with the other structures recited by claims 9 and 13. Thus, one of ordinary skill would not be motivated to make the proposed combination; moreover, if made, the proposed combination would not result in the claimed structure. For at least this reason, the proposed combination of Yajima, Isogai, Kawata, and Butler still fails to render obvious claim 9, nor claim 13.

Second, Butler's T-adapter is arranged so that two flow paths are branched apart outside a water tank. By contrast, claims 9 and 13 recite a first coupling block connected to one end portion of the double tube, with a first branch flow path formed in the first coupling block, which causes the temperature control water from the external tube to flow into the temperature control water flow path formed in the pump. Thus, the first coupling block of the claimed invention is arranged, and performs, in substantially the opposite manner to Butler's T-adapter. One of ordinary skill would not find it obvious merely to flip Butler's T-adapter around to meet the claim recitations, at least because Butler does not teach how to connect an inverted T-adapter to a pump. Instead, it appears that Butler's T-adapter would require significant and non-obvious further modifications in order to be connected with, for example, Yajima's pump. For at least this additional reason, the proposed combination still fails to render obvious claim 9, nor claim 13.

Claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as obvious over Yajima in view of Isogai, Kawata, and Butler, and further in view of Kawano (U.S. Pat. No. 6,258,167). Claim 8 was rejected under 35 U.S.C. § 103(a) as obvious over Yajima in view of Isogai, Kawata, Butler, and Kawano, and further in view of Fedulov, A. I., Journal of Mining Science, 1979, Vol. 15, pages 54-65.

Applicant does not find in Kawano, nor in Fedulov, any teaching or suggestion to supplement the deficiencies of Yajima, Isogai, Kawata, and Butler

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as applied against the independent claims 9 and 13. Thus, Applicant deems claims 9 and 13 stand allowable over any combination of the cited references. Furthermore, at least because each one of claims 6-8 depends from claim 9, Applicant respectfully submits that these dependent claims also stand allowable over each and all of the cited references, however combined.

Conclusion

Having distinguished independent claims 9 and 13 from the cited prior art, Applicant therefore requests that the obviousness rejections of claims 5-9 and 13 be withdrawn. However, if the Examiner believes any issues remain outstanding to prevent allowance of the claims presented herein, Applicant respectfully requests that the Examiner promptly contact Applicant's below-signed representative at the listed telephone number to discuss such issues.

Applicant believes no fees are due in connection with this Amendment and Response. If additional fees are deemed necessary, Applicant's Attorneys hereby authorize the Commissioner to deduct such fees from our Deposit Account 13-0235.

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